Abstract

This invention discloses of a muffler and catalytic converter device, and in addition, a muffler, and a catalytic converter, wherein each type of device uses a porous metal that may function as the sound absorption material for the muffler part of the device, and the substrate for the catalyst coating for the catalytic converter part of the device. In order to be effectiveness as a substrate and to have good sound absorption, the porous metal has a pore density of between 80% and 98% and a pore diameter of between 20μm and 1200μm. The porous metal provides structural strength, and is resistant to corrosion, heat, and impact from exhaust flow. It is also easy and cheap to fabricate. For the muffler and catalytic converter device, by combining the customary two devices into one, the cost of production as well as the cost of installation for the device is lowered. Therefore, the muffler and catalytic converter device, muffler, and catalytic converter each having the porous metal that serves functions including good sound absorption characteristics over a wide spectrum of frequencies, that is efficient in the removal of environmental contaminants from the exhaust, and that is durable, and easy and cheap to manufacture for mass production.